

WHAT IS CLAIMED IS:

1. An electronic device, comprising:
a semiconductor chip having a first surface in electrical communication with a substrate;
a heat spreader being arrayed in closely spaced relationship with an opposite surface of said semiconductor chip; and
adhesive means bonding said heat spreader to said semiconductor chip, said adhesive means comprising an electrically conductive adhesive positioned on a center or an areal surface portion of said semiconductor chip, and an electrically non-conductive adhesive extending about said electrically conductive adhesive for concurrently bonding said heat spreader to said semiconductor chip.
2. An electronic device, as claimed in Claim 1, wherein said heat spreader comprises an electrically conductive material forming an electrical connection with said semiconductor chip through said electrically conductive adhesive.
3. An electronic device, as claimed in Claim 1, wherein said heat spreader is constituted of a heat-absorbing and dissipating material.
4. An electronic device, as claimed in Claim 2, wherein said heat spreader is selected from the group of materials consisting of copper, silver or aluminum.
5. An electronic device, as claimed in Claim 1, wherein said heat spreader comprises a plate-shaped lid or cap member adhesively bonded to said semiconductor chip.
6. An electronic device, as claimed in Claim 1, wherein said electrically conductive adhesive comprises a silicone adhesive electrically connecting said heat spreader and said semiconductor chip.
7. An electronic device, as claimed in Claim 1, wherein said electrically non-conductive adhesive comprises a thermally conductive silicone adhesive for conveying heat from said semiconductor chip to said heat spreader.

8. An electronic device, as claimed in Claim 1, wherein said electrically conductive adhesive is deposited on the areal surface portion of said semiconductor chip surface to form an about 1 mm diameter bond area with said heat spreader.

9. An electronic device, as claimed in Claim 8, wherein said electrically non-conductive adhesive is deposited on said semiconductor chip so as to cover the remaining surface area of said chip extending about said electrically conductive adhesive.

10. An electronic device, as claimed in Claim 8, wherein said heat spreader is spaced from said semiconductor chip to provide a bondline thickness of about 0.025 mm to 0.15 mm for said adhesives.

11. A method of forming an electronic device, said method comprising:
providing a semiconductor chip having a first surface in electrical communication with a substrate;
arranging a heat spreader in closely spaced relationship with an opposite surface of said semiconductor chip; and
having adhesive means bond said heat spreader to said semiconductor chip, said adhesive means comprising an electrically conductive adhesive positioned on a center or an areal surface portion of said semiconductor chip, and an electrically non-conductive adhesive extending about said electrically conductive adhesive for concurrently bonding said heat spreader to said semiconductor chip.

12. A method, as claimed in Claim 11, wherein said heat spreader comprises an electrically conductive material forming an electrical connection with said semiconductor chip through said electrically conductive adhesive.

13. A method, as claimed in Claim 11, wherein said heat spreader is constituted of a metallic heat-absorbing and dissipating material.

14. A method, as claimed in Claim 12, wherein said heat spreader is selected from the group of materials consisting of copper, silver or aluminum.

15. A method, as claimed in Claim 11, wherein said heat spreader comprises a plate-shaped lid or cap member adhesively bonded to said semiconductor chip.

16. A method, as claimed in Claim 11, wherein said electrically conductive adhesive comprises a silicone adhesive electrically connecting said heat spreader and said semiconductor chip.

17. A method, as claimed in Claim 11, wherein said electrically non-conductive adhesive comprises a thermally conductive silicone adhesive for conveying heat from said semiconductor chip to said heat spreader.

18. A method, as claimed in Claim 11, wherein said electrically conductive adhesive is deposited on the areal surface portion of said semiconductor chip surface to form an about 1 mm diameter bond area with said heat spreader.

19. A method, as claimed in Claim 18, wherein said electrically non-conductive adhesive is deposited on said semiconductor chip so as to cover the remaining surface area of said chip extending about said electrically conductive adhesive.

20. A method, as claimed in Claim 18, wherein said heat spreader is spaced from said semiconductor chip to provide a bondline thickness of about 0.025 mm to 0.15 mm for said adhesives.